

WHAT IS CLAIMED IS:

1. Device for balancing of a radial threaded spindle eccentricity of a spindle drive (1) to avoid blocking of the spindle drive during lifting movement of a platform (2), especially during lifting movement of the platform with objects (S) in a machine, in which the platform is mounted by means of several devices (L1; L2; L3; L4) arranged on it on several axiparallel spindles (G1; G2; G3; G4) and can be lifted axially along the spindle together with the bearing devices characterized by the spindle drive (1) having at least three axiparallel, rotatable threaded spindles (G1; G2; G3; G4) with bearing devices (L1; L2; L3; L4) with different or the same radial bearing clearance (F1; F2) in a polygonal arrangement; and low-friction bearing devices (L1; L2; L3; L4) arranged with radial bearing clearance (F1; F2) to balance the radial eccentricity of the rotating threaded spindle so that a relative radial movement of the rotating spindles to platform (2) with limited friction force is possible.

2. Device according to Claim 1, characterized by a first bearing device (L1) of platform (2) arranged essentially radially on a first spindle (G1) free of play, a second bearing device (L2) having a radial bearing clearance (F1) on both sides of a second spindle (G2), which is prescribed to run radially and linearly back-and-forth from the first spindle (G1) and the third and additional bearing devices (L3, L4) arranged with radial bearing clearance (F2) that is active all the way around the corresponding third and additional spindles (G3,G4).

3. Device according to Claim 1, characterized by all bearing devices (L1; L2; L3; L4) being arranged on the bearing spindle (G1; G2; F3; G4) of platform (2) having a bearing plate (F2) that is active radially all the way around.

4. Device according to Claim 1 characterized by the bearing devices (L1; L2; L3; L4) each having an annular ball bearing (3) arranged concentrically around the spindle (G1; G2; G3; G4) by which the radial bearing clearance (F1; F2) between platform (2) and the spindle can be produced free of friction to balance the threaded spindle eccentricity.

5. Device according to Claim 2, characterized by limitation of the radial bearing clearance (F1; F2) between bearing devices (L2; L3; L4) and spindle (G2; G3; G4) being produced by limitation devices (21; 22) arranged on platform (2) and engaging the spindles radially.

6. Device according to Claim 3, characterized by for limitation of the radial bearing clearance (F2) between the bearing devices (L1; L2; L3; L4) and the spindles (G1; G2; G3; G4) and to avoid radial movement of the platform (2), fixed limitation devices (50) being arranged on the apparatus side, which engage at right angles to the lifting movement on all four sides of platform (2).

7. Device for balancing of a radial threaded spindle eccentricity of a spindle drive (1) in order to avoid blocking of the spindle drive during lifting of a platform (2), especially during lifting movement of the platform with objects (S) in a machine, in which the platform is mounted by means of several bearing devices (L1; L2; L3; L4) arranged on it on several axiparallel spindles (G1; G2; G3; G4) and can be lifted together with the bearing devices axially along the spindles, characterized by the bearing devices (L1; L2; L3; L4) each having an annular ball bearing (3) arranged concentrically around the spindles (G1; G2; G3; G4) by which a radial bearing clearance (F1; F2) can be produced between platform (2) and the spindles to balance the threaded spindle eccentricity in low-friction fashion.

8. Device according to Claim 7, characterized by the ball bearings (3) each having a first plane bearing shell (31) aligned at right angles to the lifting movement and a second plane bearing shell (32) aligned plane-parallel to the first, between which, held by an annular cage (33; 33.1; 33.2), the balls (34) of each ball bearing are mounted to rotate freely, the first bearing shell (31) of the ball bearing (3) being rigidly connected to a corresponding spindle (M1; M2; M3; M4) of the bearing device (L1; L2; L3; L4) and the second bearing shell (32) being rigidly connected to the platform (2).

9. Device according to Claim 8, characterized by the bearing shells (31;32) having a plane support width for the balls (34) in the radial direction, which is greater than the maximum radial bearing clearance (F1; F2) predetermined by the maximum spindle eccentricity and the ball cage (33; 33.1; 33.2) having an outer (33.1) and an inner (33.2) annular element around the balls (34) in a concentric arrangement around spindles (G1; G2; G3; G4), the inner annular element (33.2) having an inside diameter that essentially corresponds to an outside diameter of the spindle (M1; M2; M3; M4).

10. Device according to Claim 7, characterized by the bearing devices (L1; L2; L3; L4) each having an annular ball bearing (4) arranged concentrically around threaded spindle (G1; G2; G3; G4), a first concave, ball-guiding bearing shell (41) of the ball bearing being rigidly connected to a spindle (M1; M2; M3; M4) of the bearing device (L1; L2; L3; L4) and whose second bearing shell (42) is rigidly connected to platform (2) in a plane-parallel position relative to the first bearing shell (41) and has a plane support side for the balls (44) of ball bearing (4).

11. Device according to Claim 10, characterized by all threaded
spindles (G1; G2; G3; G4) of the spindle drive (1) being driven synchronously by a
single microprocessor-controlled drive unit (6); and the spindle drive (1) with its
5 platform (2) having a vertically directed lifting movement.

12. Device according to Claim 11, characterized by the objects (S)
being plate-like or sheet-like and can be stacked on platform (2) and removed from it;
and the machine being a sheet processing machine.

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13. Device according to Claim 11, characterized by the spindles (G1;
G2; G3; G4) having a combination of threaded spindles and cylinder shafts, the
cylinder shafts being used for guiding and as rotational and tilting protection for
platform (2).

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